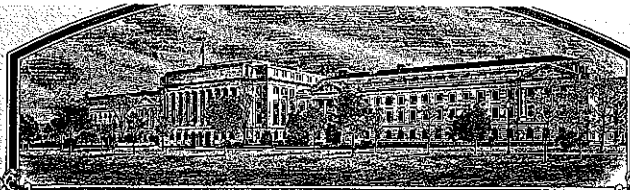


No.

200000318



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

*Delta and Pine Land Company d/b/a Deltapine Seed*

*Whereas*, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'DP 5110 S'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighth day of May, in the year of our Lord two thousand one.*



*Attest*

*Alvin K. Post*

Acting Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

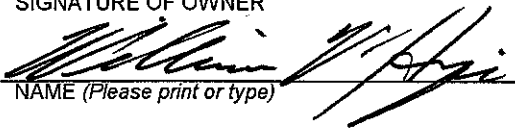
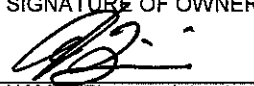
*Menerson*

Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE  
**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER  D&PL Technology Holding Corp.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME DPX 4910 S		3. VARIETY NAME <b>DP 5110 S</b> <i>7 Feb. 2000</i>	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)  100 Main Street Scott, MS 38772		5. TELEPHONE (include area code) (662) 742-4141		FOR OFFICIAL USE ONLY	
6. FAX (include area code) (662)-742-3182		7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware	
9. DATE OF INCORPORATION Oct. 19, 1978		10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION: (First person listed will receive all papers)  Delta and Pine Land Company Kelly Casavechia PO Box 157 Scott, MS 38772		FILING AND EXAMINATION FEES: \$ 2150 - DATE 08/01/00  CERTIFICATION FEE: \$ 320.00/00 DATE 4/15/01	
11. TELEPHONE (include area code) (662) 742-4414		12. FAX (include area code) (662) 742-3182		13. E MAIL kelly.h.casavechia@deltaandpine.com	
14. CROP KIND (Common Name) Soybean		15. GENUS AND SPECIES NAME OF CROP Glycine max		16. FAMILY NAME (Botanical) Leguminosae	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D Additional Description of Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450) made payable to "Treasurer of the United States" (Mail to Plant Variety Protection Office)			
19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no," go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES? YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER  NAME (Please print or type) William V. Hugie		SIGNATURE OF OWNER  NAME (Please print or type) Christopher N. Tinius			
CAPACITY OR TITLE Vice President New Technologies Research Delta and Pine Land Company		DATE 7/31/00		CAPACITY OR TITLE Director of Soybean Research Delta and Pine Land Company	
DATE 7/31/00					

Delta and Pine Land's Application for DPX 4910 S

Exhibit A

Origin and Breeding History of the Variety

SUMMER 1994	Original cross 94536 made at Scott, Mississippi between 5024 and DP 3478. The line 5024 was selected from A5979*[A6785*(W20*DPL415)]. The line W20 donated the Als <sub>1</sub> allele for enhanced insensitivity to sulfonylurea herbicides.
WINTER 1994-1995	F <sub>1</sub> advanced to F <sub>2</sub> under lights in Costa Rica.
SUMMER-FALL 1995	F <sub>2</sub> advanced to F <sub>4</sub> by the bulk pod method in Costa Rica.
WINTER 1995-1996	F <sub>4</sub> seed planted and about 200 single plants were selected in Costa Rica.
SUMMER 1996	About 200 F <sub>5</sub> plant rows were grown at Scott, Mississippi and row 96-01862 was found to be segregating for podwall color. The row was composited for further testing.
SUMMER 1997	96-01862 was yield tested in preliminary trials at Scott, Mississippi.
SUMMER 1998	96-01862 was yield tested at 9 locations across the southern US. About 2 pounds of seed were sent to Costa Rica to purify the line for podwall color.
FALL-WINTER 1998	Plants with tan pod walls were harvested in bulk and replanted in Costa Rica. The increase was determined to be stable for the characteristics listed in Exhibit C of this application, and no variants were observed. About 450 pounds of seed were returned to the US.
SUMMER 1999	96-01862 was yield tested at 9 locations across the southern US. Approximately 300 bushels of Foundation seed was produced at Scott, Mississippi. A seed soak assay confirmed the uniformity of the line for the presence of the Als <sub>1</sub> allele. 96-01862 was renamed DPX 4910 S.
SUMMER 2000	DPX 4910 S yield tested at 10 southern US locations and approximately 142 acres were planted for increase.

## Delta and Pine Land's Application for DPX 4910 S

## Exhibit B

## Statement of Distinctness

## NOVELTY STATEMENT

*SH 7 Feb. 2001***DP 5110 S****DP 4748 S**

To our knowledge, ~~DPX 4910 S~~ most resembles ~~DP 4748~~, which was selected from the same cross. Differences include but are not restricted to the following:

1. DPX 4910 S has tan podwalls whereas DP 4748 has brown podwalls.
2. DPX 4910 S has brown hila whereas DP 4748 has black hila.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT C  
(Soybean)**

**OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* (L.) Merr.)**

NAME OF APPLICANT(S)	FOR OFFICIAL USE ONLY
	PYPONUMBER 200000318
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	
	VARIETY NAME
	TEMPORARY OR EXPERIMENTAL DESIGNATION DPX 4910 S

**PLEASE READ ALL INSTRUCTIONS CAREFULLY:** Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in the first box (e.g. 

9	9	9
---	---	---

 or 

0	9
---	---

) when number is either 99 or less or 9 or less respectively. Data for quantitative

plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal

Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used:

Please answer all questions for your variety; lack of response may delay progress of your application.

**A. MORPHOLOGY**

**Seed Shape:**

<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>2</td></tr></table> 1 = Spherical (L/W, L/T, and T/W ratios < 1.2)	2	2 = Spherical-Flattened (L/W ratio > 1.2; L/T ratio < 1.2)
2		
3 = Elongate (L/T ratio > 1.2; T/W ratio < 1.2)	4 = Elongate-Flattened (L/T ratio > 1.2; T/W ratio > 1.2)	

**Seed Coat Color:**

<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td></tr></table> 1 = Yellow	1	2 = Green	3 = Brown	4 = Black	5 = Other (Please Specify) _____
1					

**Seed Coat Luster:**

<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>2</td></tr></table> 1 = Dull	2	2 = Shiny
2		

**Seed Size:**

<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>5</td></tr></table> grams/100 seeds	1	5
1	5	

Hilum Color:

<div>3</div>	1 = Buff 6 = Black	2 = Yellow 7 = Other (Please Specify) _____	3 = Brown	4 = Gray	5 = Imperfect Black
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Cotyledon Color:

<div>1</div>	1 = Yellow	2 = Green
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Seed Protein Peroxidase Activity:

<div>2</div>	1 = Low	2 = High
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Hypocotyl Color:

<div>2</div>	1 = Green ( 'Evans' or 'Davis' )	2 = Green with Bronze Bands below Cotyledon ( 'Woodworth' or 'Tracy' )	3 = Light Purple below Cotyledons ( 'Beeson' or 'Pickett 71' )	4 = Dark Purple extending to unifoliolate leaves ( 'Hodgson', 'Coker', or 'Hampton 266A' )
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Leaf Shape:

<div>3</div>	1 = Lanceolate	2 = Oval	3 = Ovate	4 = Other (Please Specify) _____
--------------	----------------	----------	-----------	----------------------------------

Flower Color:

<div>1</div>	1 = White	2 = Purple	3 = White with a Purple Throat
--------------	-----------	------------	--------------------------------

Pod Color:

<div>1</div>	1 = Tan	2 = Brown	3 = Black
--------------	---------	-----------	-----------

Pubescence Color:

<div>2</div>	1 = Gray	2 = Brown (Tawny)	3 = Light Tawny
--------------	----------	-------------------	-----------------

Plant Habit:

<div>3</div>	1 = Determinate	2 = Semi - Determinate	3 = Indeterminate	4 = Intermediate
--------------	-----------------	------------------------	-------------------	------------------

Maturity Group:

<div>0</div>	<div>7</div>	1 = 000 6 = III 11 = VIII	2 = 00 7 = IV 12 = IX	3 = 0 8 = V 13 = X	4 = I 9 = VI 14 = XI	5 = II 10 = VII 15 = XII
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Maturity Subgroup:

<div>9</div>	Please enter a value from 0 - 9
--------------	---------------------------------

B. DISEASE REACTIONS                      0 = Not Tested                      1 = Susceptible                      2 = Resistant                      3 = Tolerant

Bacterial

<div>0</div>	Bacterial Pustule ( <i>Xanthomonas campestris</i> pv. <i>glycines</i> (Nakano) Dye)
<div>0</div>	Bacterial Blight ( <i>Pseudomonas syringae</i> pv. <i>glycinea</i> (Coerper) Young, Dye, & Wilkie)
<div>0</div>	Wildfire Blight ( <i>Pseudomonas syringae</i> pv. <i>tabaci</i> (Wolf & Foster) Young, Dye, & Wilkie)

**B. DISEASE REACTIONS (Continued)**

0 = Not Tested

1 = Susceptible

2 = Resistant

3 = Tolerant

**Fungal**

2000003187

0

**Brown Spot (*Septoria glycines* Hemmi)**

**Frogeye Leaf Spot (*Cercospora sojina* Hara)**

0

race 1

0

race 2

0

race 3

0

race 4

0

race 5

0

race 6

0

Other (Please Specify) \_\_\_\_\_

0

**Target Spot (*Corynespora cassicola* (Berk. & Curt.) Wei)**

0

**Downey Mildew (*Peronospora trifoliorum* var. *manchurica* (Naum.) Syd. ex Gäum)**

0

**Powdery Mildew (*Microsphaera diffusa* Cke. & Pk.)**

0

**Brown Stem Rot (*Phialophora gregata* (Allington & Chamberlain) W. Gams.)**

2

**Stem Canker (*Diaporthe phaseolorum* (Cke. & Ell.) Sacc. var. *caulivora* Athow & Caldwell)**

0

**Pod and Stem Blight (*Diaporthe phaseolorum* (Cke. & Ell.) Sacc. var. *sojae* (Lehman) Wehm.)**

0

**Purple Seed Stain (*Cercospora kikuchii* (T. Matsu. & Tomoyasu) Gardener)**

0

**Rhizoctonia Root Rot (*Rhizoctonia solani* Kühn)**

**Phytophthora Root Rot (*Phytophthora megasperma* Drechs. f. sp. *glycinea* (Kuan & Erwin))**

0

race 1

0

race 8

0

race 15

0

race 22

0

race 2

0

race 9

0

race 16

0

race 23

0

race 3

0

race 10

0

race 17

0

race 24

0

race 4

0

race 11

0

race 18

0

race 25

0

race 5

0

race 12

0

race 19

0

race 26

0

race 6

0

race 13

0

race 20

0

Other (Please Specify)

0

race 7

0

race 14

0

race 21

0

**Bud Blight (Tobacco Ringspot Virus)**

0

**Yellow Mosaic (Bean Yellow Mosaic Virus)**

2000003187

Cowpea Mosaic (Cowpea Chlorotic Virus)

Pod Mottle (Bean Pod Mottle Virus)

Seed Mottle (Soybean Mosaic Virus)

Nematode

Soybean Cyst Nematode (*Heterodera glycines* Ichinohe)

<input type="text" value="0"/>	race 1	<input type="text" value="0"/>	race 4	<input type="text" value="0"/>	race 9
<input type="text" value="0"/>	race 2	<input type="text" value="0"/>	race 5	<input type="text" value="1"/>	race 14
<input type="text" value="1"/>	race 3	<input type="text" value="0"/>	race 6	<input type="text" value="0"/>	Other (Please Specify) _____

Lance Nematode (*Hoplolaimus columbus* Sher)

Southern Root Knot Nematode (*Meloidogyne incognita* (Kofoid & White) Chitwood)

Northern Root Knot Nematode (*Meloidogyne hapla* Chitwood)

Peanut Root Knot Nematode (*Meloidogyne arenaria* (Neal) Chitwood)

Reniform Nematode (*Rotylenchus reniformus* Linwood & Olivera)

Javanese Nematode (*Meloidogyne javanica* (Treub) Chitwood)

Other Nematode (Please Specify) \_\_\_\_\_

C. PHYSIOLOGICAL RESPONSES 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

Iron Chlorosis on Calcareous Soil

Phosphorus  Other (Please Specify) \_\_\_\_\_

Boron

Aluminum

Salt

Drought



**D. INSECT REACTIONS**

0 = Not Tested

1 = Susceptible

2 = Resistant

3 = Tolerant

Mexican Bean Beetle (*Epilachna varivestis* Mulsant)Potato Leaf Hopper (*Empoasca fabae* (Harris))

Other (Please Specify) \_\_\_\_\_

**E. HERBICIDE REACTIONS**

0 = Not Tested

1 = Susceptible

2 = Resistant

Metribuzin

Bentazone

Sulfonylurea

Glyphosate

Glufosinate

Pendimethalin

Other (Please Specify) \_\_\_\_\_

**F. TRANSGENIC COMPOSITION**

Has the development of the subject variety included the insertion of genetic material from an organism other than a soybean, or, the removal of genetic material from the application variety?

If yes, please complete the following information requests\*. Use additional pages if necessary.

☐

YES

☒

NO

1. Please state the vector's name:

2. Please state the vector components:

3. Please describe the genetic material successfully transferred into the subject variety:

4. Please describe the insertion protocol:

\* A literature citation(s) explaining the four information requests above may be an acceptable alternative to completion of the "Transgenic Composition" portion of this form.

**G. BIOCHEMICAL MARKERS**

Please describe any biochemical information here, which you believe will be helpful in further describing the subject variety (e.g. Simple Sequence Repeats, Restriction Fragment Length Polymorphisms, Isozymic Characterization). Use additional pages if necessary.

Delta and Pine Land's Application for DPX 4910 S

## Exhibit D

### Additional Description of the Variety

#### ADDITIONAL DESCRIPTION

DPX 4910 S is an  $F_4$  selection composited in the  $F_5$  generation from the cross 5024\*DP 3478. 5024 is a selection from A5979\*[A6785\*(W20\*DPL415)]. W20 was the donor of the  $Als_1$  allele that confers enhanced insensitivity to sulfonylurea herbicides in DPX 4910 S. It is of late-Group IV maturity and is being released because of its superior yield performance across southern US environments. Plants of DPX 4910 S are tall with white flowers, tawny pubescence, and tan podwalls at maturity. Seeds of DPX 4910 S are shiny with brown hila. DPX 4910 S is resistant to southern stem canker and susceptible to cyst and root knot nematodes.



# **Deltapine Seed**

Soybean Product Nomination Form

**DPX 4910 S**

C. TINIUS  
Soybean Project Leader  
December, 1999

200000310

**DPX 4910 S**  
**PRODUCT SUMMARY SHEET**

**KEY FEATURES**

Excellent yield potential  
STS® gene for tolerance to sulfonylurea herbicides  
Excellent resistance to stem canker  
Tall, indeterminate growth habit

**PRODUCT DESCRIPTION**

<u>Trait</u>	<u>Phenotype</u>
Relative maturity	4.9
Roundup Ready™	No
STS®	Yes
Flower color	White
Pubescence color	Tawny
Hilum color	Brown
Podwall color	Tan
Seed size	2900/lb
Seed protein	33.3%
Seed oil	20.0%
Peroxidase reaction	Positive
Seedcoat luster	Shiny
Hypocotyl color	Bronze
Seed shape	Spherical flattened
Leaflet size	Medium
Leaflet color	Dark green
Canopy	Open
Growth habit	Indeterminate
SCN race 3	Susceptible
SCN race 14	Susceptible
Common root knot	Susceptible
Peanut root knot	Susceptible
Javanese root knot	Untested
Lance nematode	Untested
Frogeye leafspot	Resistant
Sudden death	Untested
Stem canker	Resistant
Phytophthora root rot	Untested
Red crown rot	Untested
Chloride tolerance	Untested
Aerial Blight	Susceptible

**BREEDER'S SUBJECTIVE RATINGS**

Field emergence	Excellent
Early vigor	Good
Narrow rows	Excellent
Wide rows	Excellent
No-till	Excellent
Late planting	Excellent
Poorly-drained soils	Excellent
Shatter resistance	Excellent

**PRODUCT IDENTITY**

Line selected by: Dr. Grover Shannon  
Former designation: 96-01862  
Pedigree: DP 3571 S sib\*DP 4909  
Areas of adaptation: Midsouth and Southeast  
Replace: DP 4909  
Complement: DP 4750 RR  
Main competition: P9511  
Most similar line: DP 4750 RR

**YIELD HISTORY**

Outyielded DP 4909 by 21% in 11 Midsouth trials  
Outyielded DP 4909 by 21% in 4 Southeast trials  
Yield rank was 1/48 over 8 locations in 1999  
Yield rank was 1/24 over 7 locations in 1998  
Yield rank was 1/48 over 1 location in 1997

**KNOWN WEAKNESSES**

Susceptible to cyst and root knot nematodes  
Green stems at maturity in some environments

**SEED STOCK STATUS**

301 bushels of Foundation seed  
31 sub-lines in Costa Rica with brown podwalls

**ADDITIONAL DESCRIPTION**

Offtypes of each of the following traits may be exhibited in up to 1% of the plants of this variety: flower color, pubescence color and hila color.

# DPX 4910 S

## PRODUCT PERFORMANCE

### Combined data, all locations 1998-1999

	YIELD		MAT	HGT	LDG
	<u>bu/ac</u>	<u>%4909</u>			
<b>DPX 4910 S</b>	<b>56.1</b>	<b>121</b>	<b>1.2</b>	<b>40.2</b>	<b>2.2</b>
DP 4909	46.3	100	0	37.2	2.1
P9511	50.3	109	1.6	41.1	1.8
Locations	15		8	19	18

### Data by region

#### Midsouth, all locations, 1998-1999

	YIELD		MAT	HGT	LDG
	<u>bu/ac</u>	<u>%4909</u>			
<b>DPX 4910 S</b>	<b>53.5</b>	<b>121</b>	<b>0.7</b>	<b>39.9</b>	<b>2.4</b>
DP 4909	44.3	100	0	36.6	2.1
P9511	46.7	105	1.3	40.3	1.8
Locations	11		5	14	14

#### Southeast, all locations, 1998-1999

	YIELD		MAT	HGT	LDG
	<u>bu/ac</u>	<u>%4909</u>			
<b>DPX 4910 S</b>	<b>63.1</b>	<b>121</b>	<b>2.0</b>	<b>41.2</b>	<b>2.4</b>
DP 4909	52.1	100	0	39.0	1.9
P9511	60.1	115	2.0	43.4	2.0
Locations	4		3	5	4

In 13/15 research trials, DPX 4910 S has exceeded the mean yield of the trial by 10% or greater.

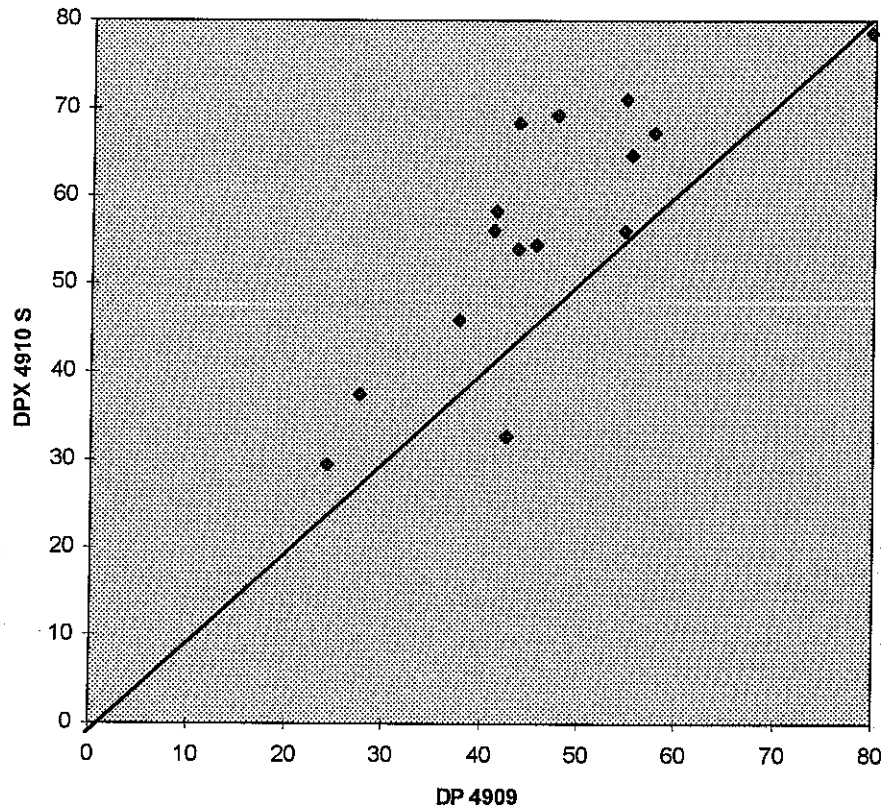
In 14/15 research trials, DPX 4910 S has been among the top 1/3 of entries for yield.

In 4/15 research trials, DPX 4910 S has been the highest-yielding entry in the trial.

In both 1998 and 1999, DPX 4910 S was the highest-yielding entry in the trial over all locations.

**DPX 4910 S**  
PRODUCT PERFORMANCE

**DPX 4910 S vs DP 4909**



This scattergram depicts the head-to-head performance of DPX 4910 S against DP 4909 in 15 research trials conducted during 1998 and 1999. The axes are graduated in bushels/acre, and a point indicates the yields of the two varieties at a given environment. DPX 4910 S has out-yielded DP 4909 13/15 times.

# **DPX 4910 S** **PRODUCT PERFORMANCE**

## **Combined data, all locations, 1999 only**

	YIELD		MAT	HGT	LDG
	bu/ac	%4748			
<b>DPX 4910 S</b>	<b>57.1</b>	<b>110</b>	<b>3.0</b>	<b>39.4</b>	<b>2.1</b>
DP 4748 S	51.7	100	0	37.7	2.6
Locations	8		4	9	8

## **Data by region**

### **Midsouth, all locations, 1999 only**

	YIELD		MAT	HGT	LDG
	bu/ac	%4748			
<b>DPX 4910 S</b>	<b>55.6</b>	<b>112</b>	<b>6.5</b>	<b>39.7</b>	<b>2.1</b>
DP 4748 S	49.6	100	0	38.2	2.6
Locations	6		2	7	7

### **Southeast, all locations, 1999 only**

	YIELD		MAT	HGT	LDG
	bu/ac	%4748			
<b>DPX 4910 S</b>	<b>61.6</b>	<b>106</b>	<b>-0.5</b>	<b>38.5</b>	<b>2.3</b>
DP 4748 S	52.1	100	0	39.0	1.9
Locations	2		2	2	1

In 7/8 research trials, DPX 4910 S has exceeded the mean yield of the trial by 10% or greater.

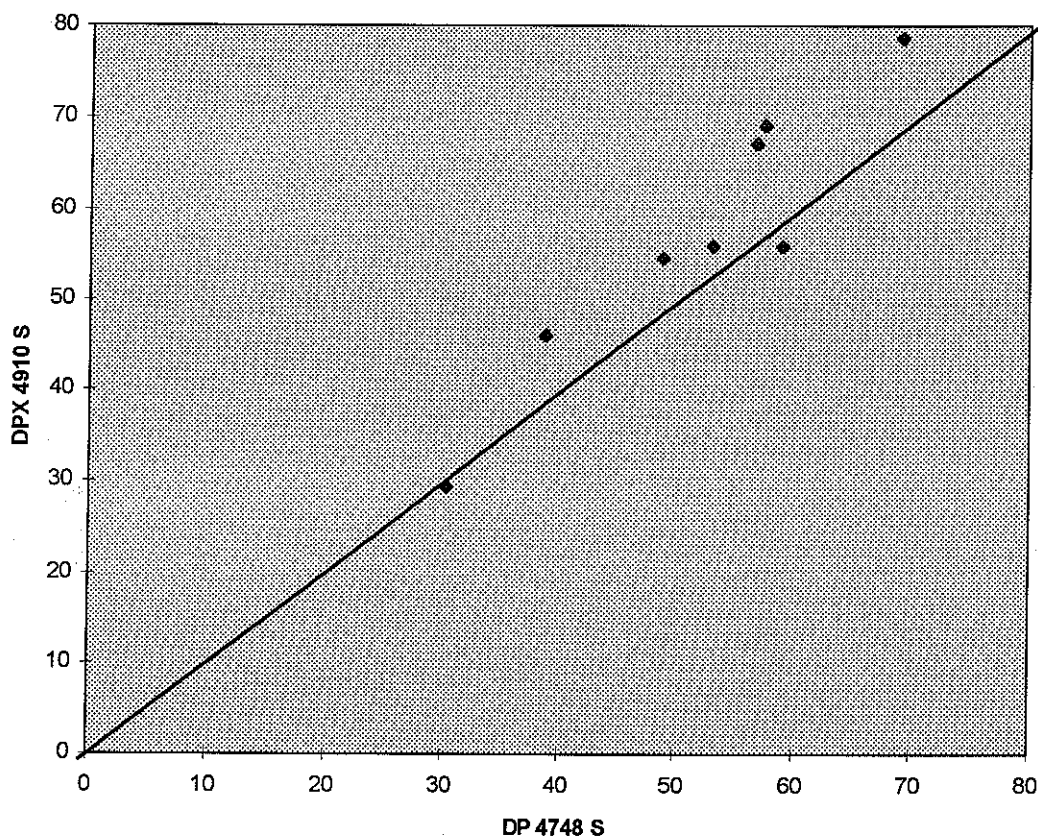
In 8/8 research trials, DPX 4910 S has been among the top 1/3 of entries for yield.

In 2/8 research trials, DPX 4910 S has been the highest-yielding entry in the trial.

In 1999, DPX 4910 S was the highest-yielding entry in the trial over all locations.

**DPX 4910 S**  
PRODUCT PERFORMANCE

**DPX 4910 S vs DP 4748 S**



This scattergram depicts the head-to-head performance of DPX 4910 S against DP 4748 S in 8 research trials conducted during 1998 and 1999. The axes are graduated in bushels/acre, and a point indicates the yields of the two varieties at a given environment. DPX 4910 S has out-yielded DP4748 S 6/8 times.



# DPX 4910 S

## DISEASE REACTION DOCUMENTATION

### Soybean Cyst Nematode (*Heterodera glycines*)

Data from Dr. Lawrence Young, USDA, Jackson, Tennessee

Line	Race 3 Score	Race 14 Score
DPX 4910 S	2.1	4.3
Res. Check	1.0	2.2
Sus. Check	4.8	4.7

Scale: 1= 0 to 5 females/plant, 2= 6 to 10, 3= 11 to 20, 4 = 21-40, 5 = more than 40 females/plant

### Root Knot Nematode (*Meloidogyne incognita* and *M. arenaria*)

Data from Dr. Robert Kinloch, Univ. of Florida, Jay, Florida

Line	M.i. Score	M.a. Score
DPX 4910 S	2.5	3.5
Res. Check	1.0	2.5
Sus. Check	2.5	2.5

Scale: 1= no galling, 5= very severe galling

### Stem Canker (*Diaporthe phaseolorum* (Cooke & Ellis) Sacc. f. sp. *meridionalis* (Morgan-Jones)

Data from Dr. Grover Shannon, Deltapine Seed, Scott, Mississippi

Line	1998 Score	1999 Score
DPX 4910 S	1.0	1.0
DP 4909	1.0	1.0
P9511	1.0	1.0

Scale: 1= no symptoms, 5= very severe symptoms

Delta and Pine Land's Application for DPX 4910 S

Exhibit E

Statement of the Basis of Ownership

DPX 4910 S originated from crosses made by employees of the Research Department of Delta and Pine Land Company (D&PL). Work product of these employees is the property of D&PL. D&PL has assigned all of its rights as owner of DPX 4910 S to its wholly owned subsidiary, D&PL Technology Holding Corp.

DPX 4910 S contains a proprietary gene, patented by E.I. du Pont de Nemours and Company and licensed to D&PL, which encodes a protein which provides enhanced insensitivity to sulfonylurea herbicides in soybean cultivars.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paper Reduction Act (PRA) of 1995.

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) D&PL Technology Holding Corp.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER DPX 4910 S	3. VARIETY NAME
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) P.O. Box 157 Scott, Mississippi 38772 USA	5. TELEPHONE (Include area code) 662-742-4141	6. FAX (Include area code) 662-742-3182
		7. PVPO NUMBER

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block.  
If no, please explain.☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. National or a U.S. based company?  
If no, give name of country☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO

If no, give name of country

11. Additional explanation on ownership (If needed, use the reverse for extra space):

DPX 4910 s contains a proprietary gene, patented by E.I. du Pont de Nemours and Company and licensed to D&amp;PL, which encodes a protein which provides enhanced insensitivity to sulfonylurea herbicides in soybean cultivars.

**Please Note:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

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